

**TENNESSEE AIR POLLUTION CONTROL BOARD
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
NASHVILLE, TENNESSEE 37243-1531**



OPERATING PERMIT (TITLE V) Issued Pursuant to Tennessee Air Quality Act

This permit fulfills the requirements of Title V of the Federal Clean Air Act (42 U.S.C. 7661a-7661e) and the federal regulations promulgated thereunder at 40 CFR Part 70. (FR Vol. 57, No. 140, Tuesday, July 21, 1992 p.32295-32312). This permit is issued in accordance with the provisions of paragraph 1200-3-9-.02(11) of the Tennessee Air Pollution Control Regulations. The permittee has been granted permission to operate an air contaminant source in accordance with emissions limitations and monitoring requirements set forth herein.

Date Issued: ***** , 2003

Permit Number: **554154**

Date Expires: ***** , 2008

Issued To:

Printpack, Inc

Installation Address:

**727 Anglin Lane
Jackson**

Installation Description:

57-0195-01: Rotogravure Printing Operation
57-0195-03: Flexographic Printing Operation
57-0195-06: Flexographic Printing Operation
57-0195-07: Flexographic Printing Operation
57-0195-08: Photopolymer Platemaking System

Draft

Emission Source Reference No.: **57-0195**

Renewal Application Due Date: Between November 30, 2000 and February 28, 2001 Primary SIC: 27

Responsible Official:

Name: Douglas C. Cook
Title: Director of Environmental Affairs

Facility Contact Person:

Name: Kim Ward
Title: Environmental/Safety Coord.
Phone: (731) 423-0951

Information Relied Upon:

Title V renewal application dated February 2, 2001

(continued on the next page)

TECHNICAL SECRETARY

No Authority is Granted by this Permit to Operate, Construct, or Maintain any Installation in Violation of any Law, Statute, Code, Ordinance, Rule, or Regulation of the State of Tennessee or any of its Political Subdivisions.

POST OR FILE AT INSTALLATION ADDRESS

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SECTION A

GENERAL PERMIT CONDITIONS

A permit issued under the provisions of paragraph 1200-3-9-.02(11) is a permit issued pursuant to the requirements of title V of the Federal Act and its implementing Federal regulations promulgated at 40 CFR, Part 70.

- A1. **Definitions.** Terms not otherwise defined in the permit shall have the meaning assigned to such terms in the referenced regulation.

TAPCR 1200-3

- A2. **Compliance requirement.** All terms and conditions in a permit issued pursuant to paragraph 1200-3-9-.02(11) including any provisions designed to limit a source's potential to emit, are enforceable by the Administrator and citizens under the Federal Act.

The permittee shall comply with all conditions of its permit. Except for requirements specifically designated herein as not being federally enforceable, non-compliance with the permit requirements is a violation of the Federal Act and the Tennessee Air Quality Act and is grounds for enforcement action; for a permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. Non-compliance with permit conditions specifically designated herein as not being federally enforceable is a violation of the Tennessee Air Quality Act and may be grounds for these actions.

TAPCR 1200-3-9-.02(11)(e)2(i) and 1200-3-9-.02(11)(e)1(vi)(I)

- A3. **Need to halt or reduce activity.** The need to halt or reduce activity is not a defense for noncompliance. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit. However, nothing in this item shall be construed as precluding consideration of a need to halt or reduce activity as a mitigating factor in assessing penalties for noncompliance if the health, safety or environmental impacts of halting or reducing operations would be more serious than the impacts of continuing operations.

TAPCR 1200-3-9-.02(11)(e)1(vi)(II)

- A4. **The permit.** The permit may be modified, revoked, reopened, and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition. This permit supersedes any previous permits for sources included in the Title V application.

TAPCR 1200-3-9-.02(11)(e)1(vi)(III)

- A5. **Property rights.** The permit does not convey any property rights of any sort, or any exclusive privilege.

TAPCR 1200-3-9-.02(11)(e)1(vi)(IV)

- A6. **Submittal of requested information.** The permittee shall furnish to the Technical Secretary, within a reasonable time, any information that the Technical Secretary may request in writing to determine whether cause exists for modifying, revoking and reissuing, or termination of the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Technical Secretary copies of records required to be kept by the permit. If the permittee claims that such information is confidential, the Technical Secretary may review that claim and hold the information in protected status until such time that the Board can hear any contested proceedings regarding confidentiality disputes. If the information is desired by EPA, the permittee may mail the information directly to EPA. Any claims of confidentiality for federal purposes will be determined by EPA.

TAPCR 1200-3-9-.02(11)(e)1(vi)(V)

- A7. **Severability clause.** The requirements of this permit are severable. A dispute regarding one or more requirements of this permit does not invalidate or otherwise excuse the permittee from their duty to comply with the remaining portion of the permit.

TAPCR 1200-3-9.02(11)(e)1(v)

A8. **Fee payment.**

(a) The permittee shall pay an annual major source emission fee based upon the responsible official's choice of actual emissions or allowable emissions. An emission cap of 4,000 tons per year per regulated pollutant per major source SIC Code shall apply to actual or allowable based emission fees. A major source annual emission fee will not be charged for emissions in excess of the cap (s) or for carbon monoxide.

(b) Major sources who have filed a timely, complete operating permit application in accordance with 1200-3-9-.02(11), shall pay allowable emission based fees until the beginning of the next annual accounting period following receipt of their major source operating permit. At that time, the permittee shall begin paying their annual emission fee based upon their choice of actual or allowable based fees, or mixed actual and allowable based fees as stated under SECTION E of this permit. Once permitted, altering the existing choice shall be accomplished by a written request of the major source, filed in the office of the Technical Secretary at least one hundred eighty days prior to the expiration or reissuance of the major source operating permit.

(c) Major sources must conform to the following requirements with respect to fee payments:

1. If a major source choosing an allowable based annual emission fee wishes to restructure its allowable emissions for the purposes of lowering its annual emission fees, a mutually agreed upon, more restrictive regulatory requirement may be established to minimize the allowable emissions and thus the annual emission fee. The more restrictive requirement must be specified on the permit, and must include the method used to determine compliance with the limitation. The documentation procedure to be followed by the major source must also be included to insure that the limit is not exceeded. Restructuring the allowable emissions is permissible only in the annual accounting periods of eligibility and only, if the written request for restructuring is filed with the Technical Secretary at least 120 days prior to the beginning of the annual accounting period of eligibility. These periods of eligibility occur upon expiration of the initial major source operating permit, renewal of an expired major source operating permit or reissuance of a major source operating permit.

2. Beginning with the annual accounting period beginning July 1, 1997 to June 30, 1998, major sources paying on allowable based emission fees will be billed by the Division no later than April 1 prior to the end of the accounting period. The major source annual emission fee is due July 1 following the end of the accounting period.

3. Beginning with the annual accounting period beginning July 1, 1997 to June 30, 1998, major sources choosing an actual based annual emission fee shall file an actual emissions analysis with the Technical Secretary which summarizes the actual emissions of all regulated pollutants at the air contaminant sources of their facility. Based upon the actual emissions analysis, the source shall calculate the fee due and submit the payment and the analysis each July 1st following the end of the annual accounting period.

4. Beginning with the annual accounting period beginning July 1, 1997 to June 30, 1998, major sources choosing a mixture of allowable and actual based emission fees shall file an actual emissions and allowable emissions analysis with the Technical Secretary which summarizes the actual and allowable emissions of all regulated pollutants at the air contaminant sources of their facility. Based upon the analysis, the source shall calculate the fee due and submit the payment and the analysis each July 1st following the end of the annual accounting period.

The mixed based fee shall be calculated utilizing the 4,000 ton cap specified in subparagraph 1200-3-26-.02(2)(i). In determining the tonnages to be applied toward the regulated pollutant 4,000 ton cap in a mixed based fee, the source shall first calculate the actual emission based fees for a regulated pollutant and apply that tonnage toward the regulated pollutant's cap. The remaining tonnage available in the 4,000 ton category of a regulated pollutant shall be subject to allowable emission based fee calculations for the sources that were not included in the actual emission based fee calculations. Once the 4,000 ton cap has been reached for a regulated pollutant, no additional fee shall be required.

5. Major sources choosing to pay their major source annual emission fee based on actual based emissions or a mixture of allowable and actual based emissions may request an extension of time to file their emissions analysis with the Technical Secretary. The extension may be granted by the Technical Secretary up to ninety (90) days. The request for extension must be postmarked no later than July 1 or the request for extension shall be denied. The request for extension to file must state the reason and give an adequate explanation.

An estimated annual emission fee payment of no less than eighty percent (80%) of the fee due July 1 must accompany the request for extension to avoid penalties and interest on the underpayment of the annual emission fee. A remaining balance due must accompany the emission analysis. If there has been an overpayment, a refund may be requested in writing to the Division or be applied as a credit toward next year's major source annual emission fee. The request for

extension of time is not available to major sources choosing to pay their major source annual emission fee based on allowable emissions.

6. Newly constructed major sources or minor existing sources modifying their operations such that they become a major source in the midst of the standard July 1st to June 30th annual accounting period, shall pay allowable based annual emission fees for the fractional remainder of the annual accounting period commencing upon their start-up. At the beginning of the next annual accounting period, the "responsible official" of the source may choose to pay annual emission fees based on actual or allowable emissions or a mixture of the two as provided for in this rule 1200-3-26-.02.

(d) Where more than one (1) allowable emission limit is applicable to a regulated pollutant, the allowable emissions for the regulated pollutants shall not be double counted. Major sources subject to the provisions of paragraph 1200-3-26-.02(9) shall apportion their emissions as follows to ensure that their fees are not double counted.

1. Sources that are subject to federally promulgated hazardous air pollutant standards that can be imposed under Chapter 1200-3-11 or Chapter 1200-3-31 will place such regulated emissions in the specific hazardous air pollutant under regulation. If the pollutant is also in the family of volatile organic compounds or the family of particulates, the pollutant shall not be placed in that respective family category.

2. A miscellaneous category of hazardous air pollutants shall be used for hazardous air pollutants listed at part 1200-3-26-.02(2)(i)12 that do not have an allowable emission standard. A pollutant placed in this category shall not be subject to being placed in any other category such as volatile organic compounds or particulates.

3. Each individual hazardous air pollutant and the miscellaneous category of hazardous air pollutants is subject to the 4,000 ton cap provisions of subparagraph 1200-3-26-.02(2)(i).

4. Major sources that wish to pay annual emission fees for PM₁₀ on an allowable emission basis may do so if they have a specific PM₁₀ allowable emission standard. If a major source has a total particulate emission standard, but wishes to pay annual emission fees on an actual PM₁₀ emission basis, it may do so if the PM₁₀ actual emission levels are proven to the satisfaction of the Technical Secretary. The method to demonstrate the actual PM₁₀ emission levels must be made as part of the source's major source operating permit in advance in order to exercise this option. The PM₁₀ emissions reported under these options shall not be subject to fees under the family of particulate emissions. The 4,000 ton cap provisions of subparagraph 1200-3-26-.02(2)(i) shall also apply to PM₁₀ emissions.

TAPCR 1200-3-26-.02 (3) and (9) and 1200-3-9-.02(11)(e)1(vii)

A9. **Permit revision not required.** A permit revision will not be required under any approved economic incentives, marketable permits, emissions trading and other similar programs or process for changes that are provided for in the permit.

TAPCR 1200-3-9-.02(11)(e)1(viii)

A10. **Inspection and entry.** Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Technical Secretary or his authorized representative to perform the following for the purposes of determining compliance with the permit applicable requirements:

(a) Enter upon, at reasonable times, the permittee's premises where a source is located or emissions-related activity is conducted, or where records must be kept under the conditions of the permit;

(b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit;

(c) Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and

(d) As authorized by the Clean Air Act and Chapter 1200-3-10 of TAPCR, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit or applicable requirements.

(e) "Reasonable times" shall be considered to be customary business hours unless reasonable cause exists to suspect noncompliance with the Act, Division 1200-3 or any permit issued pursuant thereto and the Technical Secretary specifically authorizes an inspector to inspect a facility at any other time.

TAPCR 1200-3-9-.02(11)(e)3.(ii)

A11. Permit shield.

- (a) Compliance with the conditions of this permit shall be deemed compliance with all applicable requirements as of the date of permit issuance, provided that:
1. Such applicable requirements are included and are specifically identified in the permit; or
 2. The Technical Secretary, in acting on the permit application or revision, determines in writing that other requirements specifically identified are not applicable to the source, and the permit includes the determination or a concise summary thereof.
- (b) Nothing in this permit shall alter or affect the following:
1. The provisions of section 303 of the Federal Act (emergency orders), including the authority of the Administrator under that section. Similarly, the provisions of T.C.A. §68-201-109 (emergency orders) including the authority of the Governor under the section;
 2. The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance;
 3. The applicable requirements of the acid rain program, consistent with section 408(a) of the Federal Act; or
 4. The ability of EPA to obtain information from a source pursuant to section 114 of the Federal Act.
- (c) Permit shield is granted to the permittee.

A12. Permit renewal and expiration.

- (a) Permit expiration terminates the source's right to operate unless a timely and complete renewal application has been submitted at least 180 days, but no more than 270 days prior to the expiration of this permit.
- (b) Provided that the permittee submits a timely and complete application for permit renewal the source will not be considered in violation of paragraph 1200-3-9-.02(11) until the Technical Secretary takes final action on the permit application, except as otherwise noted in paragraph 1200-3-9-.02(11).
- (c) This permit, its shield provided in Condition A11, and its conditions will be extended and effective after its expiration date provided that the source has submitted a timely, complete renewal application to the Technical Secretary.

TAPCR 1200-3-9-.02(11)(f)3 and 2, 1200-3-9-.02(11)(d)1(i)(III), and 1200-3-9-.02(11)(a)2

A13. Reopening for cause.

- (a) A permit shall be reopened and revised prior to the expiration of the permit under any of the circumstances listed below:
1. Additional applicable requirements under the Federal Act become applicable to the sources contained in this permit provided the permit has a remaining term of 3 or more years. Such a reopening shall be completed not later than 18 months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the permit expiration date of this permit, unless the original has been extended pursuant to 1200-3-9-.02(11)(a)2.
 2. Additional requirements become applicable to an affected source under the acid rain program.
 3. The Technical Secretary or EPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit.
 4. The Technical Secretary or EPA determines that the permit must be revised or revoked to assure compliance with the applicable requirements.
- (b) Proceedings to reopen and issue a permit shall follow the same proceedings as apply to initial permit issuance and shall affect only those parts of the permit for which cause to reopen exists, and not the entire permit. Such reopening shall be made as expeditiously as practicable.
- (c) Reopenings for cause shall not be initiated before a notice of such intent is provided to the permittee by the Technical Secretary at least 30 days in advance of the date that the permit is to be reopened except that the Technical Secretary may provide a shorter time period in the case of an emergency. An emergency shall be established by the criteria of T.C.A. 68-201-109 or other compelling reasons that public welfare is being adversely affected by the operation of a source that is in compliance with its permit requirements.
- (d) If the Administrator finds that cause exists to terminate, modify, or revoke and reissue a permit as identified in A13, he is required under federal rules to notify the Technical Secretary and the permittee of such findings in writing. Upon receipt of such notification, the Technical Secretary shall investigate the matter in order to determine if he agrees or disagrees with the Administrator's findings. If he agrees with the Administrator's findings, the Technical Secretary shall conduct the reopening in the following manner:
1. The Technical Secretary shall, within 90 days after receipt of such notification, forward to EPA a proposed determination of termination, modification, or revocation and reissuance, as appropriate. If the Administrator grants

additional time to secure permit applications or additional information from the permittee, the Technical Secretary shall have the additional time period added to the standard 90 day time period.

2. EPA will evaluate the Technical Secretary's proposed revisions and respond as to their evaluation.

3. If EPA agrees with the proposed revisions, the Technical Secretary shall proceed with the reopening in the same manner prescribed under Condition A13 (b) and Condition A13 (c).

4. If the Technical Secretary disagrees with either the findings or the Administrator that a permit should be reopened or an objection of the Administrator to a proposed revision to a permit submitted pursuant to Condition A13(d), he shall bring the matter to the Board at its next regularly scheduled meeting for instructions as to how he should proceed. The permittee shall be required to file a written brief expressing their position relative to the Administrator's objection and have a responsible official present at the meeting to answer questions for the Board. If the Board agrees that EPA is wrong in their demand for a permit revision, they shall instruct the Technical Secretary to conform to EPA's demand, but to issue the permit under protest preserving all rights available for litigation against EPA.

TAPCR 1200-3-9-.02(11)(f)6 and 7.

A14. Permit transference. An administrative permit amendment allows for a change of ownership or operational control of a source where the Technical Secretary determines that no other change in the permit is necessary, provided that the following requirements are met:

(a) Transfer of ownership permit application is filed consistent with the provisions of 1200-3-9-.03(6), and

(b) written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittee has been submitted to the Technical Secretary.

TAPCR 1200-3-9-.02(11)(f)4(i)(IV) and 1200-3-9-.03(6)

A15. Air pollution alert. When the Technical Secretary has declared that an air pollution alert, an air pollution warning, or an air pollution emergency exists, the permittee must follow the requirements for that episode level as outlined in TAPCR 1200-3-9-.03(1) and TAPCR 1200-3-15-.03.

A16. Construction permit required. Except as exempted in TAPCR 1200-3-9-.04, TAPCR 1200-3-9-.02(11)(f)5, and sources considered insignificant under TAPCR 1200-3-9-.04(5), this facility shall not begin the construction of a new air contaminant source or the modification of an air contaminant source which may result in the discharge of air contaminants without first having applied for and received from the Technical Secretary a construction permit for the construction or modification of such air contaminant source.

TAPCR 1200-3-9-.01(1)(a)

A17. Notification of changes. The permittee shall notify the Technical Secretary 30 days prior to commencement of any of the following changes to an air contaminant source which would not be a modification requiring a construction permit.

(a) change in air pollution control equipment

(b) change in stack height or diameter

(c) change in exit velocity of more than 25 percent or exit temperature of more than 15 percent based on absolute temperature.

TAPCR 1200-3-9-.02(7)

A18. Schedule of compliance. The permittee will comply with any applicable requirement that becomes effective during the permit term on a timely basis. If the permittee is not in compliance the permittee must submit a schedule for coming into compliance which must include a schedule of remedial measure(s), including an enforceable set of deadlines for specific actions.

A19. Title VI.

(a) The permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR, Part 82, Subpart F, except as provided for motor vehicle air conditioners (MVACs) in Subpart B:

1. Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to Section 82.156.
2. Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to Section 82.158.
3. Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to Section 82.161.

(b) If the permittee performs a service on motor (fleet) vehicles when this service involves ozone depleting substance refrigerant in the motor vehicle air conditioner (MVAC), the permittee is subject to all the applicable requirements as specified in 40 CFR, Part 82, Subpart B, Servicing of Motor Vehicle Air Conditioners.

(c) The permittee shall be allowed to switch from any ozone-depleting substance to any alternative that is listed in the Significant New Alternatives Program(SNAP) promulgated pursuant to 40 CFR, Part 82, Subpart G, Significant New Alternatives Policy Program.

A20. 112 (r). The permittee shall comply with the requirement to submit to the Administrator or designated State Agency a risk management plan, including a registration that reflects all covered processes, by June 21, 1999, if the permittee's facility is required pursuant to 40 CFR, 68, to submit such a plan.

SECTION B

GENERAL CONDITIONS for MONITORING, REPORTING, and ENFORCEMENT

- B1. Recordkeeping.** Monitoring and related record keeping shall be performed in accordance with the requirements specified in the permit conditions for each individual permit unit. In no case shall reports of any required monitoring and record keeping be submitted less frequently than at least 180 days.
- (a) Where applicable, records of required monitoring information include the following:
1. The date, place as defined in the permit, and time of sampling or measurements;
 2. The date(s) analyses were performed;
 3. The company or entity that performed the analysis;
 4. The analytical techniques or methods used;
 5. The results of such analyses; and
 6. The operating conditions as existing at the time of sampling or measurement.
- (b) Digital data accumulation which utilizes valid data compression techniques shall be acceptable for compliance determination as long as such compression does not violate an applicable requirement and its use has been approved in advance by the Technical Secretary.
- TAPCR 1200-3-9-.02(11)(e)1(iii)
- B2. Retention of monitoring data.** The permittee shall retain records of all required monitoring data and support information for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit.
- TAPCR 1200-3-9-.02(11)(e)1(iii)(II)II
- B3. Reporting.** Reports of any required monitoring and record keeping shall be submitted to the Technical Secretary in accordance with the frequencies specified in the permit conditions for each individual permit unit. Reporting periods will be dated from the end of the first complete calendar quarter following issuance of this permit unless otherwise noted. Reports shall be submitted within 60 days of the close of the reporting period unless otherwise noted. All instances of deviations from permit requirements must be clearly identified in such reports. All required reports must be certified by the responsible official. Reports required under "State only requirements" are not required to be certified by the responsible official.
- TAPCR 1200-3-9-.02(11)(e)1(iii)
- B4. Certification.** Any application form, report or compliance certification submitted pursuant to the requirements of this permit shall contain certification by a responsible official of truth, accuracy and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete.
- TAPCR 1200-3-9-.02(11)(d)4
- B5. Annual compliance certification.** The permittee shall submit annually compliance certifications with terms and conditions contained in this permit, including emission limitations, standards, or work practice. This compliance certification shall include all of the following (provided that the identification of applicable information may cross-reference the permit or previous reports, as applicable):
- (a) The identification of each term or condition of the permit that is the basis of the certification;
- (b) The identification of the method(s) or other means used by the owner or operator for determining the compliance status with each term and condition during the certification period;
- (c) Whether such method(s) or other means provide continuous or intermittent data. Such methods and other means shall include, at a minimum, the methods and means required by this permit. If necessary, the owner or operator also shall identify any other material information that must be included in the certification to comply with section 113(c)(2) of the Federal Act, which prohibits knowingly making a false certification or omitting material information;
- (d) The status of compliance with the terms and conditions of the permit for the period covered by the certification, based on the method or means designated in B5(b) above. The certification shall identify each deviation and take it into account in the compliance certification; and
- (e) Such other facts as the Technical Secretary may require to determine the compliance status of the source.

40 CFR Part 70.6(c)(5)(iii) as amended in the Federal Register Vol.62, No.204, October 22, 1997, pages 54946 and 54947

B6. Submission of compliance certification.

The Technical Secretary
Division of Air Pollution Control
ATTN: Operating Permits Program
9th Floor, L & C Annex
401 Church Street
Nashville, Tennessee 37243-1531,

The compliance certification shall be submitted to:
and Air and EPCRA Enforcement Branch
US EPA Region IV
61 Forsyth Street, SW
Atlanta, Georgia 30303

TAPCR 1200-3-9-.02(11)(e)3(v)(IV)

B7. Emergency provisions. An emergency constitutes an affirmative defense to an enforcement action brought against this source for noncompliance with a technology based emission limitation due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

(a) The affirmative defense of the emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

1. An emergency occurred and that the permittee can identify the probable cause(s) of the emergency. "Probable" must be supported by a credible investigation into the incident that seeks to identify the causes and results in an explanation supported by generally accepted engineering or scientific principles.

2. The permitted source was at the time being properly operated. In determining whether or not a source was being properly operated, the Technical Secretary shall examine the source's written standard operating procedures which were in effect at the time of the noncompliance and any other code as detailed below that would be relevant to preventing the noncompliance. Adherence to the source's standard operating procedures will be the test of adequate preventative maintenance, careless operation, improper operation or operator error to the extent that such adherence would prevent noncompliance. The source's failure to follow recognized standards of practice to the extent that adherence to such a standard would have prevented noncompliance will disqualify the source from any claim of an emergency and an affirmative defense.

3. During the period of the emergency, the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit.

4. The permittee submitted notice of the emergency to the Technical Secretary according to the notification criteria for malfunctions in rule 1200-3-20-.03. For the purposes of this condition, "emergency" shall be substituted for "malfunction(s)" in rule 1200-3-20-.03 to determine the relevant notification threshold. The notice shall include a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

(b) In any enforcement proceeding the permittee seeking to establish the occurrence of an emergency has the burden of proof.

(c) The provisions of this condition are in addition to any emergency, malfunction or upset requirement contained in Division 1200-3 or other applicable requirement.

TAPCR 1200-3-9-.02(11)(e)7

B8. Excess emissions reporting.

(a) The permittee shall promptly notify the Technical Secretary when any emission source, air pollution control equipment, or related facility breaks down in such a manner to cause the emission of air contaminants in excess of the applicable emission standards contained in Division 1200-3 or any permit issued thereto, or of sufficient duration to cause damage to property or public health. The permittee must provide the Technical Secretary with a statement giving all pertinent facts, including the estimated duration of the breakdown. Violations of the visible emission standard which occur for less than 20 minutes in one day (midnight to midnight) need not be reported. Prompt notification will be within 24 hours of the malfunction and shall be provided by telephone to the Division's Nashville office. The Technical Secretary shall be notified when the condition causing the failure or breakdown has been corrected and the equipment is again in operation.

(b) Any malfunction that creates an imminent hazard to health must be reported by telephone immediately to the Division's Nashville office and to the State Civil Defense.

(c) A log of all malfunctions, startups, and shutdowns resulting in emissions in excess of the standards in Division 1200-3 or any permit issued thereto must be kept at the plant. All information shall be entered in the log no later than twenty-four (24) hours after the startup or shutdown is complete, or the malfunction has ceased or has been corrected. Any later discovered corrections can be added in the log as footnotes with the reason given for the change. This log must record at least the following:

1. Stack or emission point involved
2. Time malfunction, startup, or shutdown began and/or when first noticed

3. Type of malfunction and/or reason for shutdown
4. Time startup or shutdown was complete or time the air contaminant source returned to normal operation
5. The company employee making entry on the log must sign, date, and indicate the time of each log entry

The information under items 1. and 2. must be entered into the log by the end of the shift during which the malfunction or startup began. For any source utilizing continuous emission(s) monitoring, continuous emission(s) monitoring collection satisfies the above log keeping requirement.

TAPCR 1200-3-20-.03 and .04

- B9. Malfunctions, startups and shutdowns - reasonable measures required.** The permittee must take all reasonable measures to keep emissions to a minimum during startups, shutdowns, and malfunctions. These measures may include installation and use of alternate control systems, changes in operating methods or procedures, cessation of operation until the process equipment and/or air pollution control equipment is repaired, maintaining sufficient spare parts, use of overtime labor, use of outside consultants and contractors, and other appropriate means. Failures that are caused by poor maintenance, careless operation or any other preventable upset condition or preventable equipment breakdown shall not be considered malfunctions. This provision does not apply to standards found in 40 CFR, Parts 60(Standards of performance for new stationary sources), 61(National emission standards for hazardous air pollutants) and 63(National emission standards for hazardous air pollutants for source categories).

TAPCR 1200-3-20-.02

- B10. Sources located in non-attainment areas or having significant impact on air quality in a non-attainment area.** The owner or operator of all sources located in non-attainment areas or having a significant impact on air quality in a non-attainment area (for the pollutant designated) must submit a report to the Technical Secretary within thirty (30) days after the end of each calendar quarter listing the times at which malfunctions, startups and/or shutdowns, which resulted in emissions greater than any applicable emission limits and the estimated amount of emissions discharged during such times. This report shall also include total emissions during the quarter and be reported in a format specified by the Technical Secretary.

TAPCR 1200-3-20-.04(2)

- B11. Report required upon the issuance of notice of violation.** The permittee must submit within twenty (20) days after receipt of the notice of violation, the data shown below to assist the Technical Secretary in deciding whether to excuse or validate the violation. If this data has previously been available to the Technical Secretary prior to the issuance of the notice of violation no further action is required of the violating source. However, if the source desires to submit additional information, then this must be submitted within the same twenty (20) day time period. The minimum data requirements are:
- (a) The identity of the stack and/or other emission point where the excess emission(s) occurred;
 - (b) The magnitude of the excess emissions expressed in pounds per hour and the units of the applicable emission limitation and the operating data and calculations used in determining the magnitude of the excess emissions;
 - (c) The time and duration of the emissions;
 - (d) The nature and cause of such emissions;
 - (e) For malfunctions, the steps taken to correct the situation and the action taken or planned to prevent the recurrence of such malfunctions;
 - (f) The steps taken to limit the excess emissions during the occurrence reported, and
 - (g) If applicable, documentation that the air pollution control equipment, process equipment, or processes were at all times maintained and operated in a manner consistent with good operating practices for minimizing emissions.

Failure to submit the required report within the twenty (20) day period specified shall preclude the admissibility of the data for consideration of excusal for malfunctions.

TAPCR 1200-3-20-.06(2),(3) and (4)

SECTION C

PERMIT CHANGES

- C1. Operational flexibility changes.** The source may make operational flexibility changes that are not addressed or prohibited by the permit without a permit revision subject to the following requirements:
- (a) The change cannot be subject to a requirement of Title IV of the Federal Act or Chapter 1200-3-30.
 - (b) The change cannot be a modification under any provision of Title I of the federal Act or Division 1200-3.
 - (c) Each change shall meet all applicable requirements and shall not violate any existing permit term or condition.
 - (d) The source must provide contemporaneous written notice to the Technical Secretary and EPA of each such change, except for changes that are below the threshold of levels that are specified in Rule 1200-3-9-.04.
 - (e) The change shall not qualify for a permit shield under the provisions of part 1200-3-9-.02(11)(e)6.
 - (f) The permittee shall keep a record describing the changes made at the source that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under the permit, and the emissions resulting from those changes. The records incorporated into subsequently issued permits.

TAPCR 1200-3-9-.02(11)(a)4 (ii)

- C2. Section 502(b)(10) changes.**
- (a) The permittee can make certain changes without requiring a permit revision, if the changes are not modifications under Title I of the Federal Act or Division 1200-3 and the changes do not exceed the emissions allowable under the permit. The permittee must, however, provide the Administrator and Technical Secretary with written notification within a minimum of 7 days in advance of the proposed changes. The Technical Secretary may waive the 7 day advance notice in instances where the source demonstrates in writing that an emergency necessitates the change. Emergency shall be demonstrated by the criteria of TAPCR 1200-3-9-.02(11)(e)7 and in no way shall it include changes solely to take advantages of an unforeseen business opportunity. The Technical Secretary and EPA shall attach each such notice to their copy of the relevant permit.
 - (b) The written notification must include the following:
 - 1. brief description of the change within the permitted facility;
 - 2. specifies the date on which the change will occur;
 - 3. declares any change in emissions; and
 - 4. declares any permit term or condition that is no longer applicable as a result of the change.
 - (c) The permit shield provisions of TAPCR 1200-3-9-.02(11)(e)6 shall not apply to Section 502(b)(10) changes.

TAPCR 1200-3-9-.02(11)(a)4 (i)

- C3. Administrative amendment.**
- (a) Administrative permit amendments to this permit shall be in accordance with 1200-3-9-.02(11)(f)4. The source may implement the changes addressed in the request for an administrative amendment immediately upon submittal of the request.
 - (b) The permit shield shall be extended as part of an administrative permit amendment revision consistent with the provisions of TAPCR 1200-3-9-.02(11)(e)6 for such revisions made pursuant to item (c) of this condition which meet the relevant requirements of TAPCR 1200-3-9-.02(11)(e), TAPCR 1200-3-9-.02(11)(f) and TAPCR 1200-3-9-.02(11)(g) for significant permit modifications.
 - (c) Proceedings to review and grant administrative permit amendments shall be limited to only those parts of the permit for which cause to amend exists, and not the entire permit.

TAPCR 1200-3-9-.02(11)(f)4

- C4. Minor permit modifications.**
- (a) The permittee may submit an application for a minor permit modification in accordance with TAPCR 1200-3-9-.02(11)(f)5(ii).
 - (b) The permittee may make the change proposed in its minor permit modification immediately after an application is filed with the Technical Secretary.
 - (c) Proceedings to review and modify permits shall be limited to only those parts of the permit for which cause to modify exists, and not the entire permit.
 - (d) Minor permit modifications do not qualify for a permit shield.

TAPCR 1200-3-9-.02(11)(f)5(ii)

C5. Significant permit modifications.

(a) The permittee may submit an application for a significant modification in accordance with TAPCR 1200-3-9-.02(11)(f)5(iv).

(b) Proceedings to review and modify permits shall be limited to only those parts of the permit for which cause to modify exists, and not the entire permit.

TAPCR 1200-3-9-.02(11)(f)5(iv)

C6. New construction or modifications.

(a) The permittee shall designate in their construction permit application the route that they desire to follow for the purposes of incorporating the newly constructed or modified sources into their existing operating permit. The Technical Secretary shall use that information to prepare the operating permit application submittal deadlines in their construction permit.

(b) Sources desiring the permit shield shall choose the administrative amendment route of TAPCR 1200-3-9-.02(11)(f)4 or the significant modification route of TAPCR 1200-3-9-.02(11)(f)5(iv).

(c) Sources desiring expediency instead of the permit shield shall choose the minor permit modification procedure route of TAPCR 1200-3-9-.02(f)5(ii) or group processing of minor modifications under the provisions of TAPCR 1200-3-9-.02(11)5(iii) as applicable to the magnitude of their construction.

SECTION D

GENERAL APPLICABLE REQUIREMENTS

- D1. Visible emissions.** IN ABSENCE OF A SET SPECIFIC VISIBLE EMISSION STANDARD, the permittee shall not cause, suffer, allow or permit discharge of a visible emission from any air contaminant source with an opacity in excess of twenty (20) percent for an aggregate of more than five (5) minutes in any one (1) hour or more than twenty (20) minutes in any twenty-four (24) hour period; provided, however, that for fuel burning installations with fuel burning equipment of input capacity greater than 600 million btu per hour, the permittee shall not cause, suffer, allow, or permit discharge of a visible emission from any fuel burning installation with an opacity in excess of twenty (20) percent (6-minute average) except for one six minute period per one (1) hour of not more than forty (40) percent opacity. Sources constructed or modified after July 7, 1992 shall utilize 6-minute averaging.

Due allowance may be made for visible emissions in excess of that permitted under TAPCR 1200-3-5 which are necessary or unavoidable due to routine startup and shutdown conditions. The facility shall maintain a continuous, current log of all excess visible emissions showing the time at which such conditions began and ended and that such record shall be available to the Technical Secretary or his representative upon his request.

TAPCR 1200-3-5-.01(1), TAPCR 1200-3-5-.01(6) and TAPCR 1200-3-5-.02(1)

- D2. General provisions and applicability for non-process gaseous emissions.** Any person constructing or otherwise establishing a non-portable air contaminant source emitting gaseous air contaminants after April 3, 1972, or relocating an air contaminant source more than 1.0 km from the previous position after November 6, 1988, shall install and utilize the best equipment and technology currently available for controlling such gaseous emissions.

TAPCR 1200-3-6-.03(2)

- D3. Non-process emission standards.** The permittee shall not cause, suffer, allow, or permit particulate emissions from non-process sources in excess of the standards in TAPCR 1200-3-6. These standards shall be calculated using the equations found at TAPCR 1200-3-6-.02.

- D4. General provisions and applicability for process gaseous emissions.** Any person constructing or otherwise establishing an air contaminant source emitting gaseous air contaminants after April 3, 1972, or relocating an air contaminant source more than 1.0 km from the previous position after November 6, 1988, shall install and utilize equipment and technology which is deemed reasonable and proper by the Technical Secretary.

TAPCR 1200-3-7-.07(2)

- D5. Particulate emissions from process emission sources.** The permittee shall not cause, suffer, allow, or permit particulate emissions from process sources in excess of the standards in TAPCR 1200-3-7.

- D6. Sulfur dioxide emission standards.** The permittee shall not cause, suffer, allow, or permit Sulfur dioxide emissions from process and non-process sources in excess of the standards in TAPCR 1200-3-14. Regardless of the specific emission standard, new process sources shall utilize the best available control technology as deemed appropriate by the Technical Secretary of the Tennessee Air Pollution Control Board.

- D7. Fugitive Dust.**

(a) The permittee shall not cause, suffer, allow, or permit any materials to be handled, transported, or stored; or a building, its appurtenances, or a road to be used, constructed, altered, repaired, or demolished without taking reasonable precautions to prevent particulate matter from becoming airborne. Such reasonable precautions shall include, but not be limited to, the following:

1. Use, where possible, of water or chemicals for control of dust in demolition of existing buildings or structures, construction operations, grading of roads, or the clearing of land;
2. Application of asphalt, oil, water, or suitable chemicals on dirt roads, material stock piles, and other surfaces which can create airborne dusts;

3. Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials. Adequate containment methods shall be employed during sandblasting or other similar operations.
- (b) The permittee shall not cause, suffer, allow, or permit fugitive dust to be emitted in such manner to exceed five (5) minutes per hour or twenty (20) minutes per day as to produce a visible emission beyond the property line of the property on which the emission originates.

TAPCR 1200-3-8

D8. Open burning.

- (a) The permittee shall not cause, suffer, allow, or permit open burning except as specifically exempted by Rule 1200-3-4-.04, exceptions to prohibition. An exception for one time burning may be applied for through the Regional Field Office and conducted by permission from the Technical Secretary.
- (b) Open burning except for the exemptions contained in Rule 1200-3-4-.04 will not be allowed in any area where the open burning would interfere with the attainment or maintenance of the air quality standards.
- (c) No open burning permit shall be issued in any non-attainment or additional control area that might be affected by applicable contaminants from such open burning, nor any location within one half (1/2) miles of such a nonattainment or additional control area.
- (d) The open burning of tires, vinyl shingles and/or asphalt shingles is expressly prohibited.

TAPCR 1200-3-4

- D9. Asbestos.** Where applicable, the permittee shall comply with the requirements of 1200-3-11-.02(d) when conducting any renovation or demolition activities at the facility.

TAPCR 1200-3-11-.02(d) and 40 CFR, Part 61

SECTION E

SOURCE SPECIFIC EMISSION STANDARDS, OPERATING LIMITATIONS, and MONITORING, RECORDKEEPING and REPORTING REQUIREMENTS

57-0195	<u>Facility Description:</u>	Graphic printing facility located at 727 Anglin Lane, Jackson, Tennessee. Operations at this facility include rotogravure printing operations, flexographic printing, and a photopolymer platemaking system.
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Conditions E1 through E5 apply to all sources in Section E of this permit unless otherwise noted.

E1. Fee payment: actual emissions basis.

FEE EMISSIONS SUMMARY TABLE FOR MAJOR SOURCE 57-0195

REGULATED POLLUTANTS	ALLOWABLE EMISSIONS (tons per AAP)	ACTUAL EMISSIONS (tons per AAP)	COMMENTS
PARTICULATE MATTER (PM)	N/A	AEAR	Includes all fee emissions.
PM₁₀	N/A	N/A	
SO₂	N/A	AEAR	Includes all fee emissions.
VOC	N/A	AEAR	Includes all fee emissions.
NO_x	N/A	AEAR	Includes all fee emissions.
CATEGORY OF MISCELLANEOUS HAZARDOUS AIR POLLUTANTS (HAP WITHOUT A STANDARD)*			
VOC FAMILY GROUP	N/A	AEAR	Fee emissions are included in VOC above.
NON-VOC GASEOUS GROUP	N/A	N/A	
PM FAMILY GROUP	N/A	N/A	
CATEGORY OF SPECIFIC HAZARDOUS AIR POLLUTANTS (HAP WITH A STANDARD)**			
VOC FAMILY GROUP	N/A	N/A	
NON-VOC GASEOUS GROUP	N/A	N/A	
PM FAMILY GROUP	N/A	N/A	
CATEGORY OF NSPS POLLUTANTS NOT LISTED ABOVE***			
EACH NSPS POLLUTANT NOT LISTED ABOVE	N/A	N/A	

NOTES

AAP The Annual Accounting Period (AAP) is a twelve (12) consecutive month period that begins each July 1st and ends June 30th of the following year. The present Annual Accounting Period began July 1, 2003 and ends June 30, 2004. The next Annual Accounting Period begins July 1, 2004 and ends June 30, 2005.

N/A N/A indicates that no emissions are specified for fee computation.

AEAR AEAR indicates that an Actual Emissions Analysis is Required to determine the actual emissions of:

- (1) each regulated pollutant (Particulate matter, SO₂, VOC, NO_x and so forth. See TAPCR 1200-3-26-.02(2)(i) for the definition of a regulated pollutant.),
- (2) each pollutant group (VOC Family, Non-VOC Gaseous, and Particulate Family), and
- (3) the Miscellaneous HAP Category

under consideration during the Annual Accounting Period.

* **Category Of Miscellaneous HAP (HAP Without A Standard):** This category is made-up of hazardous air pollutants that do not have a federal or state standard. Each HAP is classified into one of three groups, the VOC

Family group, the Non-VOC Gaseous group, or the Particulate (PM) Family group. **For fee computation**, the Miscellaneous HAP Category is subject to the 4,000 ton cap provisions of subparagraph 1200-3-26-.02(2)(i).

**** Category Of Specific HAP (HAP With A Standard):** This category is made-up of hazardous air pollutants (HAP) that are subject to Federally promulgated Hazardous Air Pollutant Standards that can be imposed under Chapter 1200-3-11 or Chapter 1200-3-31. Each individual hazardous air pollutant is classified into one of three groups, the VOC Family group, the Non-VOC Gaseous group, or the Particulate (PM) Family group. **For fee computation**, each individual hazardous air pollutant of the Specific HAP Category is subject to the 4,000 ton cap provisions of subparagraph 1200-3-26-.02(2)(i).

***** Category Of NSPS Pollutants Not Listed Above:** This category is made-up of each New Source Performance Standard (NSPS) pollutant whose emissions are not included in the PM, SO₂, VOC or NO_x emissions from each source in this permit. **For fee computation**, each NSPS pollutant not listed above is subject to the 4,000 ton cap provisions of subparagraph 1200-3-26-.02(2)(i).

END NOTES

The permittee shall:

- (1) Pay major source annual **actual based emission fees**, as requested by the responsible official.
- (2) Prepare an **actual emissions analysis** beginning July 1, 2003 in accordance with the above **Fee Emissions Summary Table**. The **actual emissions analysis** shall include:
 - (a) the completed **Fee Emissions Summary Table**,
 - (b) each **AEAR** required by the above **Fee Emissions Summary Table**,
and
 - (c) the records required by Conditions E4, E5, E6-3, E7-3, E8-2, E9-2, and E10-1 of this permit. These records shall be used to complete the **AEARs** required by the above **Fee Emissions Summary Table**.
- (3) Submit the **actual emissions analysis** at the time the fees are paid in full.
- (4) Calculate the fee due based upon the **actual emissions analysis**, and submit the payment on July 1st following the end of the **annual accounting period**. If any part of any fee imposed under TAPCR 1200-3-26-.02 is not paid within fifteen (15) days of the due date, penalties shall at once accrue as specified in TAPCR 1200-3-26-.02(8). Major sources may request an extension of time to file their emissions analysis with the Technical Secretary as specified in Condition A8(c)5 of this permit. Emissions for regulated pollutants shall not be double counted as specified in Condition A8(d) of this permit.

Payment of the fee due and the actual emissions analysis shall be submitted to The Technical Secretary at the address in Condition E2(b) of this permit.

TAPCR 1200-3-26-.02 (3) and (9), and 1200-3-9-.02(11)(e)1 (iii) and (vii)

E2. Reporting requirements.

(a) Semiannual reports. The first report since issuance of this permit shall cover the 6-month period from January 1, 2003 to June 30, 2003 and shall be submitted within 60 days after June 30, 2003. Subsequent reports shall be submitted within 60 days after the end of each 6-month period following the June 30, 2003 report. All instances of deviations from permit requirements must be clearly identified in these reports and the reports must be certified by the responsible official.

Semiannual reports of this facility (57-0195) shall include:

- (1) Reports of any monitoring and recordkeeping required by Conditions E4, E5, E6-3, E7-3, E8-2, E9-2, and E10-1 of this permit.
- (2) The visible emission evaluation readings from Conditions E3 of this permit if required.

These reports shall be submitted to The Technical Secretary at the address in Condition E2(b) of this permit.

TAPCR 1200-3-9-.02(11)(e)1.(iii)

(b) **Annual compliance certification.** The permittee shall submit annually compliance certifications with terms and conditions contained in sections **A, B, D** and **E** of this permit, including emission limitations, standards, or work practice. This compliance certification shall include all of the following (provided that the identification of applicable information may cross-reference the permit or previous reports, as applicable):

- (1) The identification of each term or condition of the permit that is the basis of the certification;
- (2) The identification of the method(s) or other means used by the owner or operator for determining the compliance status with each term and condition during the certification period;
- (3) Whether such method(s) or other means provide continuous or intermittent data. Such methods and other means shall include, at a minimum, the methods and means required by this permit. If necessary, the owner or operator also shall identify any other material information that must be included in the certification to comply with section 113(c)(2) of the Federal Act, which prohibits knowingly making a false certification or omitting material information;
- (4) The status of compliance with the terms and conditions of the permit for the period covered by the certification, based on the method or means designated in E2(b)2 above. The certification shall identify each deviation and take it into account in the compliance certification; and
- (5) Such other facts as the Technical Secretary may require to determine the compliance status of the source.

The first certification since issuance of this permit renewal shall cover the 12- month period from January 1, 2003 to December 31, 2003 and shall be submitted within 60 days after the 12-month period ending December 31, 2003. Subsequent certifications shall be submitted within 60 days after the end of each 12-month period following the first certification. These certifications shall be submitted to:

**The Technical Secretary
Division of Air Pollution Control
ATTN: Operating Permits Program
9th Floor, L & C Annex
401 Church Street
Nashville, Tennessee 37243-1531**

and

**Air and EPCRA Enforcement Branch
US EPA Region IV
61 Forsyth Street, SW
Atlanta, Georgia 30303**

40 CFR Part 70.6(c)(5)(iii) as amended in the Federal Register Vol.62, No.204, October 22, 1997, pages 54946 and 54947

E3. Visible emissions. Visible emissions from the stacks and building(s) of this facility shall not exceed 20% opacity as specified in Rule 1200-3-5-.03(6) of the TAPCR unless otherwise noted. Visible emissions shall be determined by EPA Method 9, as published in the Federal Register, Volume 39, Number 219 on November 12, 1974 (6 minute average).

Compliance Method: The permittee shall assure compliance with the opacity standard by utilizing the opacity matrix dated June 18, 1996 that is enclosed as Attachment 1.

If the magnitude and frequency of excursions reported by the permittee in the periodic monitoring for emissions is unsatisfactory to the Technical Secretary, this permit may be reopened to impose additional opacity monitoring requirements.

E4. Particulate matter, sulfur dioxide, VOC, nitrogen oxides (NO_x), natural gas and propane combustion emissions from this source (57-0195) shall be calculated and maintained by keeping the following natural gas/propane emissions logs. These logs shall be used in the actual emissions analysis required by Condition E1 of this permit. They must be retained for a period of not less than five years and shall be made available for review upon request of the Technical Secretary or his representative.

MONTHLY COMBUSTION EMISSIONS LOG FOR SOURCE 57-0195

MONTH/YEAR (Fee Accounting Period is July 1 thru June 30 of the following year)	Propane Usage (PU) (gallons/month)	Natural Gas Usage (NGU) (standard cubic feet (scf) per month)
July/year		
Aug/year, etc		
Jun/year		
Total	PU12	NGU12

EQUATIONS FOR THE NATURAL GAS EMISSIONS LOG CALCULATIONS FOR SOURCE 57-0195:

1. PM Emissions (tons PM per year)=(NGU12 in SCF/12 months)(ap=6.2 pounds PM/10⁶scf)/(2000 lbs/ton)
 2. NO_x Emissions (tons NO_x per year)=(NGU12 in scf/12 months)(ap = 100 pounds NO_x /10⁶ scf)/(2000 lbs/ton)
 3. SO₂ Emissions (tons SO₂ per year)=(NGU12 in scf/12 months)(ap= 0.6 pounds SO₂/10⁶ scf)/(2000 lbs/ton)
 4. VOC Emissions (tons VOC per year)=(NGU12 in scf/12 months)(ap= 5.8 pounds VOC/10⁶ scf)/(2000 lbs/ton)
- Where ap = natural gas combustion emission factor from AP-42 Fifth Edition Tables -Industrial Boilers

EQUATIONS FOR THE PROPANE EMISSIONS LOG CALCULATIONS FOR SOURCE 57-0195:

1. PM Emissions (tons PM per year)=(PU12 in gal/12 months)(ap=0.6 lbs PM/10³ gal)/(2000 lb/ton)
 2. NO_x Emissions (tons NO_x per year)=(PU12 in gal/12 months)(ap=19 lbs NO_x/10³ gal)/(2000 lb/ton)
 3. SO₂ Emissions (tons SO₂ per year)=(PU12 in gal/12 months)(ap=0.10 S lbs SO₂/10³ gal)/(2000 lb/ton)
 4. VOC Emissions (tons VOC per year)=(PU12 in gal/12 months)(ap=0.5 lbs VOC/10³ gal)/(2000 lb/ton)
- Where ap= propane combustion emission factor from AP-42 Fifth Edition Tables -Industrial Boilers
And S= Sulfur content of 0.5 weight percent.

YEARLY COMBUSTION EMISSIONS LOG FOR SOURCE 57-0195

YEAR (Fee Accounting Period is July 1 thru June 30 of the following year)	PM EMISSIONS (tons PM per year)	VOC EMISSIONS (tons VOC per year)	SO ₂ EMISSIONS (tons SO ₂ per year)	NO _x EMISSIONS (tons NO _x per year)

TAPCR 1200-3-9-.02(11)(e)1.(iii)

E5. Recordkeeping for VOCs and HAPs shall include the two logs in this condition which contain the following information:

- (1) Emissions in tons of each Hazardous Air Pollutant,
- (2) Emissions in tons of all Hazardous Air Pollutants, and
- (3) Emissions in tons of VOCs excluding exempt compounds, for all input materials used during all intervals of twelve consecutive months. A log of information in the following or equivalent format (may include the permittee's Computerized Information Management System) must be maintained at the source location and kept available for inspection by the Technical Secretary or his representative. Records shall also be retained to verify the HAP content of each material. This may include MSDS, formulated data, or other documentation to establish the HAP content. This log must be retained for a period of not less than five years. A log for each of the five emission sources shall be kept separately.

Permit Number: 554154

DRAFT

Expiration Date: *****

MONTHLY VOC/HAP EMISSIONS LOG FOR SOURCE 57-0195

MONTH: YEAR:

MATERIAL NAME	USAGE (gallons per month (gpm))	VOC CONTENT (pounds VOC per gallon)	VOC EMISSIONS (tons VOC per month)	HAP ₁ CONTENT (pounds HAP ₁ per gallon)	HAP ₁ EMISSIONS (tons HAP ₁ per month)	HAP _p CONTENT (pounds HAP _p per gallon)	HAP _p EMISSIONS (tons HAP _p per month)	TOTAL HAP EMISSIONS (tons HAP ₁ thru HAP _p per month)
TOTAL								

Note: p = 1, 2, 3,..... n = the number of different hazardous air pollutants. Use columns as required for the number of different hazardous air pollutants.

YEARLY VOC/HAP EMISSIONS LOG FOR SOURCE 57-0195

MONTH/YEAR	VOC EMISSIONS (tons VOC per month)	(*)VOC EMISSIONS (tons VOC per 12 months)	(**)TOTAL HAP EMISSIONS

(*) The Tons per 12 Month value is the sum of the VOC (or HAP) emissions in the 11 months preceding the month just completed + the VOC (or HAP) emissions in the month just completed. If data is not available for the 11 months preceding the initial use of this log, this value will be equal to the value for tons per month. For the second month it will be the sum of the first month and the second month. Indicate in parentheses the number of months summed, that is, 6 (2) represents 6 tons emitted in 2 months.

(**) Annual Accounting Period is July 1 through June 30.

TAPCR 1200-3-9-.02(11)(e)1.(iii)

57-0195-01 (NESHAP)	<u>Rotogravure Printing Operation:</u>	This operation consists of two (2) rotogravure printing stations for paper and film packaging and two (2) dryers.
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Conditions E6 through E6-5 apply to source 57-0195-01.

- E6.** The maximum heat input to this source shall not exceed 16.74 MMBtu per hour. This is the capacity of the dryers as stated in the Title V permit application. Any increase in this heat input will require a construction permit. The Technical Secretary may require proof of compliance with this limit.
- E6-1.** Only natural gas and propane shall be used as fuel(s) for this source.
- E6-2.** Particulate matter emitted from this source shall not exceed 0.02 grain per dry standard cubic foot of stack gases. (1.37 pounds per hour)

TAPCR 1200-3-7-.04(1)

Compliance Method: The potential to emit particulate matter from this source is less than five tons per year. In accordance with TAPCR 1200-3-9-.04(5)(c)3. and by annual certification of compliance, the permittee shall be considered to meet the monitoring and related recordkeeping and reporting requirements of TAPCR 1200-3-9-.02(11)(e)3.(i). The permittee shall submit annually a compliance certification for particulate matter from source (57-0195-01).

E6-3. Volatile Organic Compounds (VOC) emitted from this source shall not exceed 65.5 tons during any consecutive twelve month period.

TAPCR 1200-3-7-.07(2)

Compliance Method: The permittee shall assure compliance with the VOC limit by maintaining the monthly/yearly VOC/HAP emissions logs specified in Condition E5.

E6-4. The permittee shall not apply any coating or ink at this source unless the VOC content is equal to or less than one of the following:

- (a) 40 percent VOC by volume of the coating or ink, excluding water, as applied;
- (b) 25 percent VOC by volume of the volatile content in the coating or ink, as applied; or
- (c) 0.5 kilograms (kg) VOC per kg (0.5 pound VOC per lb) coating or ink solids, as applied.

TAPCR 1200-3-18-.35(3)(a)

Compliance Method: MSDS for all VOC and HAP containing materials will be maintained and made available for inspection by the Technical Secretary or his representative. These records must be retained for a period of not less than five years. As an alternative to compliance with the limits in Condition E6-4, the permittee may comply with requirements of this condition by meeting one of the following requirements. The permittee shall maintain records in a form that can readily demonstrate compliance with the following limitations. These records must be kept on site and made available for inspection by the Technical Secretary or his representative. This log must be retained for a period of not less than five (5) years.

(1) No coatings and/or inks shall be applied unless the weighted average, by volume, VOC content of all coatings and/or inks, as applied, each day on the press is equal to or less than the limitation specified in Condition E6-4(a) as determined by the following equation:

$$VOC_{(i)(A)} = \frac{\sum_{i=1}^n L_i V_{VOCI}}{\sum_{i=1}^n L_i (V_{si} + V_{VOCI})} \times 100$$

where $VOC_{(i)(A)}$ = The weighted average VOC content in units of percent VOC by volume of all coatings and/or inks (excluding water and/or exempt compounds) used each day;

- i = Subscript denoting a specific coating or ink, as applied;
- n = The number of different coatings and/or inks, as applied, each day on a printing press;
- L_i = The liquid volume of each coating or ink, as applied, used that day in units or liters (L) (gallons [gal]);
- V_{si} = The volume fraction of solids in each coating or ink, as applied; and
- V_{VOCI} = The volume fraction of VOC in each coating or ink, as applied.

(2) No coatings and/or inks shall be applied unless the weighted average, by volume, VOC content of all coatings and/or inks, as applied, each day on the press is equal to or less than the limitation specified in Condition E6-4(b) as determined by the following equation:

$$VOC_{(i)(B)} = \frac{\sum_{i=1}^n L_i V_{VOCI}}{\sum_{i=1}^n L_i} \times 100$$

$$\sum_{i=1}^n L_i V_{VOCi}$$

where $VOC_{(i)(B)}$ = the weighted average VOC content in units of percent VOC by volume of the volatile content of all coatings and/or inks used each day;

- i = Subscript denoting a specific coating or ink, as applied;
 n = The number of different coatings and/or inks, as applied, each day on a printing press;
 L_i = The liquid volume of each coating or ink, as applied, in units of L (gal);
 V_{VOCi} = The volume fraction of VOC in each coating or ink, as applied.
 V_{Vci} = The volume fraction of volatile matter in each coating or ink, as applied.

(3) No coatings and/or inks shall be applied unless the weighted average, by volume, VOC content of all coatings and/or inks, as applied, each day on the press is equal to or less than the limitation specified in Condition E6-4(c) as determined by the following equation:

$$VOC_{(i)(B)} = \frac{\sum_{i=1}^n L_i D_i W_{VOCi}}{\sum_{I=1}^n L_i D_i W_{si}} c$$

- where $VOC_{(i)(C)}$ = The weighted average VOC content in units of mass of VOC per mass of coating and/or ink solids;
 i = Subscript denoting a specific coating or ink,
 n = The number of different coatings and/or inks, as applied, each day on a printing press;
 L_i = The liquid volume of each coating or ink, as applied, in units of L (gal);
 D_i = The density of each coating or ink, as applied, I units of mass of coating or ink per unit volume of coating or ink;
 W_{VOCi} = The weight fraction of VOC in each coating or ink, as applied; and
 W_{si} = The weight fraction of solids in each coating or ink, as applied.

E6-5. HAP usage at this source shall not exceed 10 tons of any single hazardous air pollutant or 25 tons of any combination of hazardous air pollutants during any consecutive twelve (12) month period. This limitation is based upon the agreement letter dated April 1, 1998 in order to comply with only the provisions of 40 CFR Part 63 Subpart KK, Sections 63.829(d) and 63.830(b)(1).

40 CFR 63, Subpart KK, Section 63.820(a)(2)

Compliance Method: The permittee shall maintain records on a monthly basis of all required measurements and calculations needed to demonstrate compliance with the limit in Condition E6-5, including the mass of all HAP containing materials used and the mass fraction of HAP present in each HAP containing material used. These records shall be kept on site and made available upon request to the Technical Secretary or his representative.

In the event the HAP limits are exceeded during any twelve month period, the permittee shall be considered in violation of its commitment for that twelve month period and shall be considered a major source of HAP beginning the first month after the end of the 12-month period in which either of the HAP-use thresholds was exceeded. As a major source of HAP, each such facility would be subject to the provisions of 40 CFR 63 Subpart KK and would no longer be eligible to use the provision of paragraph (a)(2) of this section.

Operation:

Conditions E7 through E7-4 apply to source 57-0195-03.

E7. The maximum heat input to this source shall not exceed 0.80 MMBtu per hour. This is the capacity of the oven as stated in the Title V permit application. Any increase in this heat input will require a construction permit. The Technical Secretary may require proof of compliance with this limit.

E7-1. Only natural gas and propane shall be used as fuel(s) for this source.

E7-2. Particulate matter emitted from this source shall not exceed 0.02 grain per dry standard cubic foot of stack gases. (0.55 pound per hour)

TAPCR 1200-3-7-.04(1)

Compliance Method: The potential to emit particulate matter from this source is less than five tons per year. In accordance with TAPCR 1200-3-9-.04(5)(c)3. and by annual certification of compliance, the permittee shall be considered to meet the monitoring and related recordkeeping and reporting requirements of TAPCR 1200-3-9-.02(11)(e)3.(i). The permittee shall submit annually a compliance certification for particulate matter from source (57-0195-03).

E7-3. Volatile Organic Compounds (VOC) emitted from this source shall not exceed 13.1 tons during any consecutive twelve month period.

TAPCR 1200-3-.07(2)

Compliance Method: The permittee shall assure compliance with the monthly/yearly VOC limit by maintaining the VOC/HAP emissions logs specified in Condition E5.

E7-4. The permittee shall not apply any coating or ink at this source unless the VOC content is equal to or less than one of the following:

- (a) 40 percent VOC by volume of the coating or ink, excluding water, as applied;
- (b) 25 percent VOC by volume of the volatile content in the coating or ink, as applied; or
- (c) 0.5 kilograms (kg) VOC per kg (0.5 pound VOC per lb) coating or ink solids, as applied.

TAPCR 1200-3-18-.35(3)(a)

Compliance Method: MSDS for all VOC and HAP containing materials will be maintained and made available for inspection by the Technical Secretary or his representative. These records must be retained for a period of not less than five years. As an alternative to compliance with the limits in Condition E7-4, the permittee may comply with requirements of this condition by meeting one of the requirements specified in Condition E6-4. The permittee shall maintain records in a form that can readily demonstrate compliance with the following limitations. These records must be kept on site and made available for inspection by the Technical Secretary or his representative. This log must be retained for a period of not less than five (5) years.

57-0195-06

Flexographic Printing
Operation:

This operation consists of a Kidder flexographic printing press with six (6) color stations including two (2) gas fired ovens.

Conditions E8 through E8-3 apply to source 57-0195-06.

E8. Only natural gas and propane shall be used as fuel(s) for this source.

E8-1. Particulate matter emitted from this source shall not exceed 0.02 grain per dry standard cubic foot of stack gases. (1.71 pounds per hour)

TAPCR 1200-3-7-.04(1)

Compliance Method: The potential to emit particulate matter from this source is less than five tons per year. In accordance with TAPCR 1200-3-9-.04(5)(c)3. and by annual certification of compliance, the permittee shall be considered to meet the monitoring and related recordkeeping and reporting requirements of TAPCR 1200-3-9-.02(11)(e)3.(i). The permittee shall submit annually a compliance certification for particulate matter from source (57-0195-06).

E8-2. Volatile Organic Compounds (VOC) emitted from this source shall not exceed 13.1 tons during any consecutive twelve month period.

TAPCR 1200-3-7-.07(2)

Compliance Method: The permittee shall assure compliance with the VOC limit by maintaining the monthly/yearly VOC/HAP emissions logs specified in Condition E5.

E8-3. The permittee shall not apply any coating or ink at this source unless the VOC content is equal to or less than one of the following:

- (a) 40 percent VOC by volume of the coating or ink, excluding water, as applied;
- (b) 25 percent VOC by volume of the volatile content in the coating or ink, as applied; or
- (c) 0.5 kilograms (kg) VOC per kg (0.5 pound VOC per lb) coating or ink solids, as applied.

TAPCR 1200-3-18-.35(3)(a)

Compliance Method: MSDS for all VOC and HAP containing materials will be maintained and made available for inspection by the Technical Secretary or his representative. These records must be retained for a period of not less than five years. As an alternative to compliance with the limits in Condition E8-3, the permittee may comply with requirements of this condition by meeting one of the requirements specified in Condition E6-4. The permittee shall maintain records in a form that can readily demonstrate compliance with the following limitations. These records must be kept on site and made available for inspection by the Technical Secretary or his representative. This log must be retained for a period of not less than five (5) years.

57-0195-07	<u>Flexographic Printing Operation:</u>	This operation consists of a PCMC flexographic printing press with six (6) color stations including two (2) gas fired ovens.
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Conditions E9 through E9-3 apply to source 57-0195-07.
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E9. Only natural gas and propane shall be used as fuel(s) for this source.

E9-1. Particulate matter emitted from this source shall not exceed 0.02 grain per dry standard cubic foot of stack gases. (0.87 pound per hour)

TAPCR 1200-3-7-.04(1)

Compliance Method: The potential to emit particulate matter from this source is less than five tons per year. In accordance with TAPCR 1200-3-9-.04(5)(c)3. and by annual certification of compliance, the permittee shall be considered to meet the monitoring and related recordkeeping and reporting requirements of TAPCR 1200-3-9-.02(11)(e)3.(i). The permittee shall submit annually a compliance certification for particulate matter from source (57-0195-07).

E9-2. Volatile Organic Compounds (VOC) emitted from this source shall not exceed 12.8 tons during any consecutive twelve month period.

Compliance Method: The permittee shall assure compliance with the VOC limit by maintaining the monthly/yearly VOC/HAP emissions log specified in Condition E5.

E9-3. The permittee shall not apply any coating or ink at this source unless the VOC content is equal to or less than one of the following:

- (a) 40 percent VOC by volume of the coating or ink, excluding water, as applied;
- (b) 25 percent VOC by volume of the volatile content in the coating or ink, as applied; or
- (c) 0.5 kilograms (kg) VOC per kg (0.5 pound VOC per lb) coating or ink solids, as applied.

TAPCR 1200-3-18-.35(3)(a)

Compliance Method: MSDS for all VOC and HAP containing materials will be maintained and made available for inspection by the Technical Secretary or his representative. These records must be retained for a period of not less than five years. As an alternative to compliance with the limits in Condition E9-3, the permittee may comply with requirements of this condition by meeting one of the requirements specified in Condition E6-4. The permittee shall maintain records in a form that can readily demonstrate compliance with the following limitations. These records must be kept on site and made available for inspection by the Technical Secretary or his representative. This log must be retained for a period of not less than five (5) years.

57-0195-08	<u>Photopolymer Platemaking System:</u>	This operation includes a UV Exposure Unit, wash unit, dryer/finisher, and an integrated distillation unit.
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Conditions E10 through E10-1 apply to source 57-0195-08.

E10. Photopolymer plate production for this source shall not exceed 100,000 square feet per year.

Compliance Method: The permittee shall maintain production records in a form that can readily demonstrate compliance with Condition E10. These records must be kept on site and made available for inspection by the Technical Secretary or his representative. This log must be retained for a period of not less than five (5) years.

E10-1. Volatile organic compounds (VOC) emitted from this source shall not exceed two (2.0) tons during any consecutive twelve month period.

TAPCR 1200-3-7-.07(2)

Compliance Method: This emission limit is based upon an emission factor of 39.2 pounds of VOC emissions per 1,000 square feet of photopolymer plates produced (Permit Condition from Operating Permit 949300P). Compliance assurance shall be demonstrated by the production records required by Condition E10 and by maintaining the monthly/yearly VOC/HAP emissions log specified in Condition E5.

END OF PERMIT NUMBER: 554154

ATTACHMENT 1

Permit Number: 554154

DRAFT

Expiration Date: *****

**OPACITY MATRIX DECISION TREE for
VISIBLE EMISSION EVALUATION METHOD 9
dated JUNE 18, 1996**

**Decision Tree PM for Opacity for
Sources Utilizing EPA Method 9**

Notes:

PM = Periodic Monitoring
required by 1200-3-9-.02(11)(e)(1)(iii)

This Decision Tree outlines the criteria by which major sources can meet the periodic monitoring and testing requirements of Title V for demonstrating compliance with the visible emissions standards in paragraph 1200-3-5-.01. It is not intended to determine compliance requirements for EPA's Compliance Assurance Monitoring (CAM) Rule (formerly referred to as Enhanced Monitoring - Proposed 40 CFR 64).

Examine each emission source using this Decision Tree to determine PM required.

Use of continuous emission monitoring systems eliminates the need to do any additional periodic monitoring.

Visible Emission Evaluations (VEEs) are to be conducted utilizing EPA Method 9. The observer must be properly certified to conduct valid evaluations.

Typical Pollutants

Particulates, VOC, CO, SO₂, NO_x, HCl, HF, HBr, Ammonia, and Methane

Initial observation to be repeated within 90 days of startup of a modified source if a new construction permit is issued for modification of the source.

A VEE conducted by TDAPC personnel after the Title V permit is issued will also constitute an initial reading.

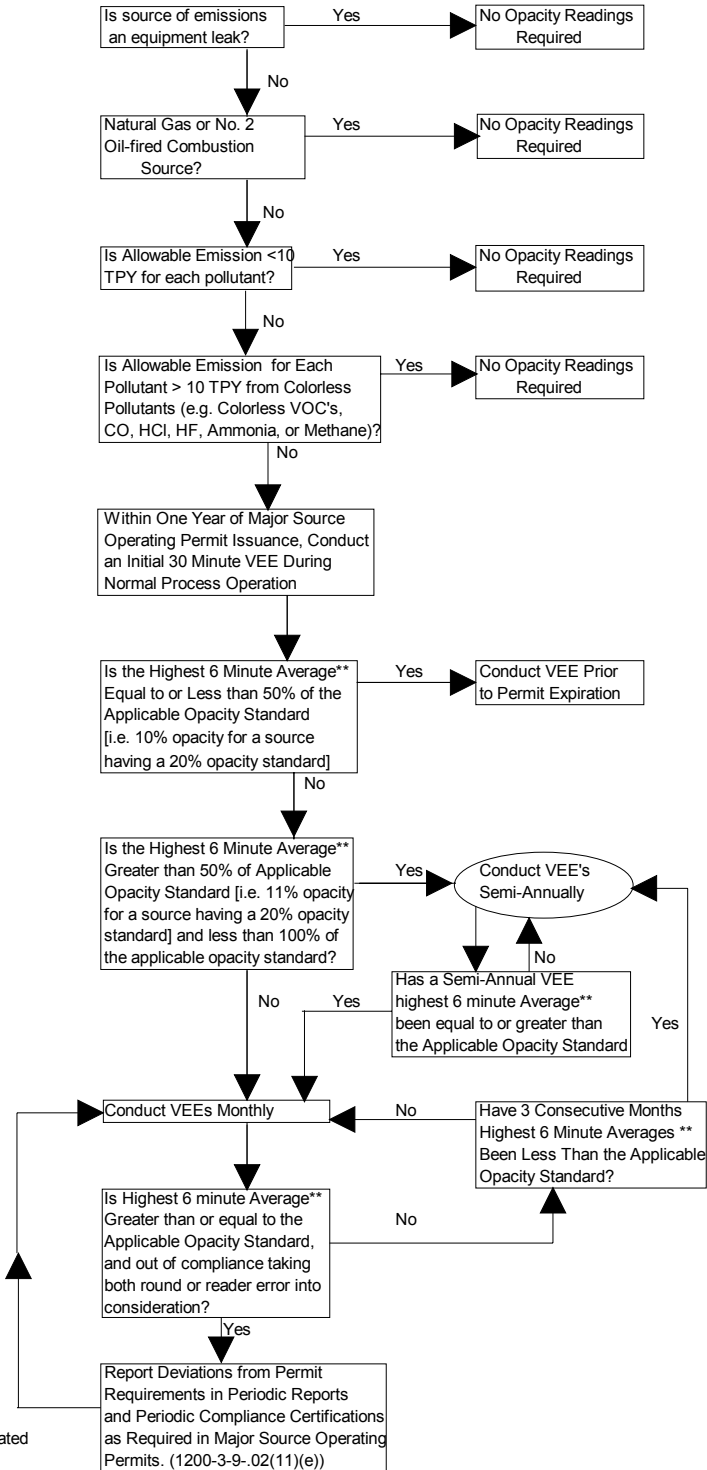
Reader Error

EPA Method 9, Non-NSPS or Neshaps stipulated opacity standards: The TDAPC guidance is to declare non-compliance when the highest six-minute average** exceeds the standard plus 6.8% opacity (e.g. 26.8% for a 20% standard).

EPA Method 9, NSPS or NESHAPS Stipulated Opacity Standards: EPA guidance is to allow only engineering round. No allowance for reader error is given.

*Not Applicable to Asbestos Manufacturing Subject to 40 CFR 61.142

**Or second highest six minute average, if the source has an exemption period stipulated in either the Regulations or in the permit.



ATTACHMENT 2

**AP-42 FIFTH EDITION EMISSION FACTORS for
NATURAL GAS and PROPANE COMBUSTION**

Table 1.4-1. EMISSION FACTORS FOR SULFUR DIOXIDE (SO₂), NITROGEN OXIDES (NO_x), AND CARBON MONOXIDE (CO) FROM NATURAL GAS COMBUSTION^a

Combustor Type (Size, 10 ⁶ Btu/hr Heat Input) (SCC)	SO ₂ ^b		NO _x ^c		CO ^d	
	Emission Factor (lb/10 ⁶ ft ³)	EMISSION FACTOR RATING	Emission Factor (lb/10 ⁶ ft ³)	EMISSION FACTOR RATING	Emission Factor (lb/10 ⁶ ft ³)	EMISSION FACTOR RATING
Utility/large Industrial Boilers (>100) (1-01-006-01, 1-01-006-04)						
Uncontrolled	0.6	A	550 ^f	A	40	A
Controlled - Low NO _x burners	0.6	A	79	D	ND	NA
Controlled - Flue gas recirculation	0.6	A	53	D	ND	NA
Small Industrial Boilers (10 - 100) (1-02-006-02)						
Uncontrolled	0.6	A	140	A	35	A
Controlled - Low NO _x burners	0.6	A	83	D	61	D
Controlled - Flue gas recirculation	0.6	A	30	C	34	C
Commercial Boilers (0.3 - <10) (1-03-006-03)						
Uncontrolled	0.6	A	100	B	21	C
Controlled - Low NO _x burners	0.6	A	17	C	15	C
Controlled - Flue gas recirculation	0.6	A	36	D	ND	NA
Residential Furnaces (<0.3) (No SCC)						
Uncontrolled	0.6	A	94	B	40	B

^a Units are lb of pollutant/10⁶ cubic feet natural gas fired. To convert from lb/10⁶ ft³ to kg/10⁶ m³, multiply by 16.0. Based on an average natural gas fired higher heating value of 1000 Btu/scf. The emission factors in this table may be converted to other natural gas heating values by multiplying the given emission factor by the ratio of the specified heating value to this average heating value. SCC = Source Classification Code. ND = no data. NA = not applicable.

^b References 13-14. Based on average sulfur content of natural gas, 2000 gr/10⁶ scf.

^c References 12-13,15-19. Expressed as NO₂.

^d References 5,12-13,17-18,20-21.

^e References 6-7.

^f For tangentially fired units, use 275 lb/10⁶ ft³. Note: This number was originally developed for AP-42 based on limited data. No additional data are available to refine this number.

^g No data; based on the factors for utility boilers.

Table 1.4-2. EMISSION FACTORS FOR PARTICULATE MATTER (PM) FROM NATURAL GAS COMBUSTION^a

Combustor Type (Size, 10 ⁶ Btu/hr Heat Input) (SCC)	Filterable PM ^b		Condensable PM ^c
	Emission Factor (lb/10 ⁶ ft ³)	EMISSION FACTOR RATING	Emission Factor (lb/10 ⁶ ft ³)
Utility/large industrial boilers (>100) (1-01-006-01, 1-01-006-04)	1 - 5	B	ND
Small industrial boilers (10 - 100) (1-02-006-02)	6.2	B	7.8
Commercial boilers (0.3 - <10) (1-03-006-03)	4.5	C	7.4
Residential furnaces (<0.3) (No SCC)	0.17	C	11

^a References 5,15,22-25. All factors represent uncontrolled emissions. Units are lb of pollutant/10⁶ cubic feet natural gas fired. To convert from lb/10⁶ ft³ to kg/10⁶ m³, multiply by 16.0. Based on an average natural gas higher heating value of 1000 Btu/scf. The emission factors in this table may be converted to other natural gas heating values by multiplying the given emission factor by the ratio of the specified heating value to this average heating value.

SCC = Source Classification Code. ND = no data. NA = not applicable.

^b Filterable PM is that particulate matter collected on or prior to the filter of an EPA Method 5 (or equivalent) sampling train.

^c Condensable PM is that particulate matter collected using EPA Method 202 (or equivalent). Total PM is the sum of the filterable PM and condensable PM. All PM emissions can be assumed to be less than 10 micrometers in aerodynamic equivalent diameter (PM-10).

Table 1.4-3. EMISSION FACTORS FOR CARBON DIOXIDE (CO₂) AND TOTAL ORGANIC COMPOUNDS (TOC)
FROM NATURAL GAS COMBUSTION^a

Combustor Type (Size, 10 ⁶ Btu/hr Heat Input) (SCC)	CO ₂ ^b		Emission Factor (lb/10 ⁶ ft ³)
	Emission Factor (lb/10 ⁶ ft ³)	EMISSION FACTOR RATING	
Utility/large industrial boilers (>100) (1-01-006-01, 1-01-006-04)	1.2 E+05	B	1.7
Small industrial boilers (10 - 100) (1-02-006-02)	1.2 E+05	B	5.8
Commercial boilers (0.3 - <10) (1-03-006-03)	1.2 E+05	B	5.8
Residential furnaces (No SCC)	1.2 E+05	B	11

^a All factors represent uncontrolled emissions. Units are lb of pollutant/10⁶ cubic feet. To convert from lb/10⁶ ft³ to kg/10⁶ m³, multiply by 16.0. Based on an average natural gas higher heating value of 1000 Btu/scf. The emission factors in this table may be converted to other natural gas heating values by multiplying the given factor by the ratio of the specified heating value to this average heating value. SCC = Source Classification Code. ND = no data.

NA = not applicable.

^b References 8,15,27-29.

^c References 5,13,15,30.

^d Reference 30: methane comprises 17% of organic compounds.

^e Reference 30: methane comprises 52% of organic compounds.

Table 1.5-1. EMISSION FACTORS FOR LPG COMBUSTION EMISSION FACTOR RATING: E

Pollutant	Butane Emission Factor (lb/10 ³ gal)		Propane Emission Factor (lb/10 ³ gal)	
	Industrial Boilers ^b (SCC 1-02-010-01)	Commercial Boilers ^c (SCC 1-03-010-01)	Industrial Boilers ^b (SCC 1-02-010-02)	Commercial Boilers ^c (SCC 1-03-010-02)
PM ^d	0.6	0.5	0.6	0.4
SO ₂ ^e	0.09S	0.09S	0.10S	0.10S
NO _x ^f	21	15	19	14
N ₂ O ^g	0.9	0.9	0.9	0.9
CO ₂ ^{h,j}	14,300	14,300	12,500	12,500
CO	3.6	2.1	3.2	1.9
TOC	0.6	0.6	0.5	0.5
CH ₄ ^k	0.2	0.2	0.2	0.2

^a Assumes emissions (except SO_x and NO_x) are the same, on a heat input basis, as for natural gas combustion. The NO_x emission factors have been multiplied by a correction factor of 1.5, which is the approximate ratio of propane/butane NO_x emissions to natural gas NO_x emissions. To convert from lb/10³ gal to kg/10³ L, multiply by 0.12. SCC = Source Classification Code.

^b Heat input capacities generally between 10 and 100 million Btu/hour.

^c Heat input capacities generally between 0.3 and 10 million Btu/hour.

^d Filterable particulate matter (PM) is that PM collected on or prior to the filter of an EPA Method 5 (or equivalent) sampling train. For natural gas, a fuel with similar combustion characteristics, all PM is less than 10 mm in aerodynamic equivalent diameter (PM-10).

^e S equals the sulfur content expressed in gr/100 ft³ gas vapor. For example, if the butane sulfur content is 0.18 gr/100 ft³, the emission factor would be (0.09 x 0.18) = 0.016 lb of SO₂/10³ gal butane burned.

^f Expressed as NO₂.

^g Reference 12.

^h Assuming 99.5% conversion of fuel carbon to CO₂.

^j EMISSION FACTOR RATING = C.

^k Reference 13.